Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte JOHN THOMAS GALLAGHER, JEREMY EWAN TURNBULL
and JOHN JOSEPH HOPWOOD

Appeal No. 2001-0423
Application No. 08/836,399

ON BRIEF

Before WILLIAM F. SMITH, SCHEINER and MILLS, Administrative Patent Judges.

SCHEINER, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 19 through 36, all the claims remaining in the application. Claim 19 is representative of the subject matter on appeal and reads as follows:

19. A method of analyzing and sequencing saccharide material composed of saccharide chains having more than three monosaccharide units interconnected

(b) treating a sample or samples of said mixed set of saccharide chains and chain fragments from the partial depolymerization treatment of step (a) with a set of exoenzymes which includes exoglycosidases of known specificity that cleave only particular glycosidic linkages at the non-reducing end of saccharide chains, said exoenzymes being applied, either singly or in combination, in accordance with a predetermined strategy,

(c) continuing step (b) to an extent sufficient to obtain complete digestion and cleave susceptible linkages at the non-reducing end of all the saccharide chains, and then,

(d) analyzing said sample or samples to detect the saccharide chain fragments generated by cleavage treatments, said fragments having a reducing end derived from the reducing end of the corresponding chain in the original saccharide material, and at least partially deducing the monosaccharide sequence in the saccharide material.

The examiner relies on the following prior art:

Rademacher, T.W. et al. (Rademacher) EP 0 421 972 Apr. 10, 1991

Lee, Kyung-Bok et al. (Lee), "A new method for sequencing linear oligosaccharides on gels using charged, fluorescent conjugates," Carbohydrate Research, Vol. 214, pp. 155-168 (1991)

Claims 19 through 36 stand rejected under 35 U.S.C. § 103 as unpatentable over Rademacher and Lee.

We reverse the examiner's rejection.

DECISION ON APPEAL

Rademacher describes a method of oligonucleotide sequencing. According to the examiner, the reference teaches "reducing terminal residues by enzymatic methods

Lee, another reference directed to oligosaccharide sequencing, describes "treating with exoglycosidases, conjugating with fluorescent compounds, and making borohydride conjugates." Answer, page 6. According to the examiner, Lee also "describes first employing endoglycosidase and then exoglycosidase to sequence more complex oligosaccharides" (Id.), but we note that Lee actually proposes a process of treating glycoproteins with endoglycosidase to release oligosaccharides, followed by conjugation of the released oligosaccharides to a fluorescent compound, fractionation and purification, and "sequential treatment of each purified [ ] conjugate with specific exoglycosidases and possibly endoglycosidases." Lee, page 163, last full paragraph.

The examiner finds that "the result of the presently claimed method is the same as that of the references, no advantages or unexpected results are disclosed" (Answer, page 8) and concludes that "it would have been obvious . . . to employ the well known standard method of sequencing taught by Rademacher with the sequential steps and different types of enzymes as taught by [Lee] because Rademacher teaches combinations of enzymes and types of enzymes [that] can be used together" and "[p]arallel steps render obvious serial steps where there is an expected result." Id., page 7. Finally, the examiner asserts that "no order of sequence of enzyme treatment steps is specified in the claims." Id.

Appellants argue that the references, alone or in combination, "do not teach an

linkages spaced from the non-reducing end of the saccharide [ ], thereby producing a mixed set of saccharide chains," while step (b) requires treatment of the "mixed set of saccharide chains and chain fragments from the partial depolymerization treatment of step (a) with a set of exoenzymes." Rademacher does not teach sequential treatment at all; to the extent that Lee suggests sequential treatment, it is the other way around (exoglycosidases followed by endoglycosidases).

The initial burden of presenting a prima facie case of obviousness rests on the examiner. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). Thus, the examiner is charged with addressing every limitation of a claimed invention. This the examiner has not done. Moreover, findings of fact underlying an obviousness rejection, as well as conclusions of law, must be made in accordance with the Administrative Procedure Act, 5 U.S.C. 706 (A),(E) (1994), see Zurko v. Dickinson, 527 U.S. 150, 158, 119 S.Ct. 1816, 1821, 50 USPQ2d 1930, 1934 (1999), and must be supported by substantial evidence within the record. See In re Gartside, 203 F.3d 1305, 1315, 53 USPQ2d 1769, 1775 (Fed. Cir. 2000). In our judgment, the examiner has not identified evidence sufficient to support a conclusion of obviousness of claims containing the limitations discussed above.

Inasmuch as the examiner has failed to provide an adequate factual basis to establish a prima facie case of obviousness within the meaning of 35 U.S.C. § 103, we

In any case, we agree with appellants that, even in the absence of "advantages or unexpected results" the examiner "cannot properly reject [a new] method on the basis that it obtains the same results as the prior art." Reply Brief, page 2. "The examiner's [position], if sustained, would foreclose the development of new alternatives to prior procedures." Id.

On this record, we reverse the examiner's rejection of claims 19 through 36 under 35 U.S.C. § 103.

REVERSED

William F. Smith Administrative Patent Judge	)
	) BOARD OF PATENT
Toni R. Scheiner Administrative Patent Judge	) APPEALS AND)
	) INTERFERENCES
Demetra J. Mills Administrative Patent Judge	)

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